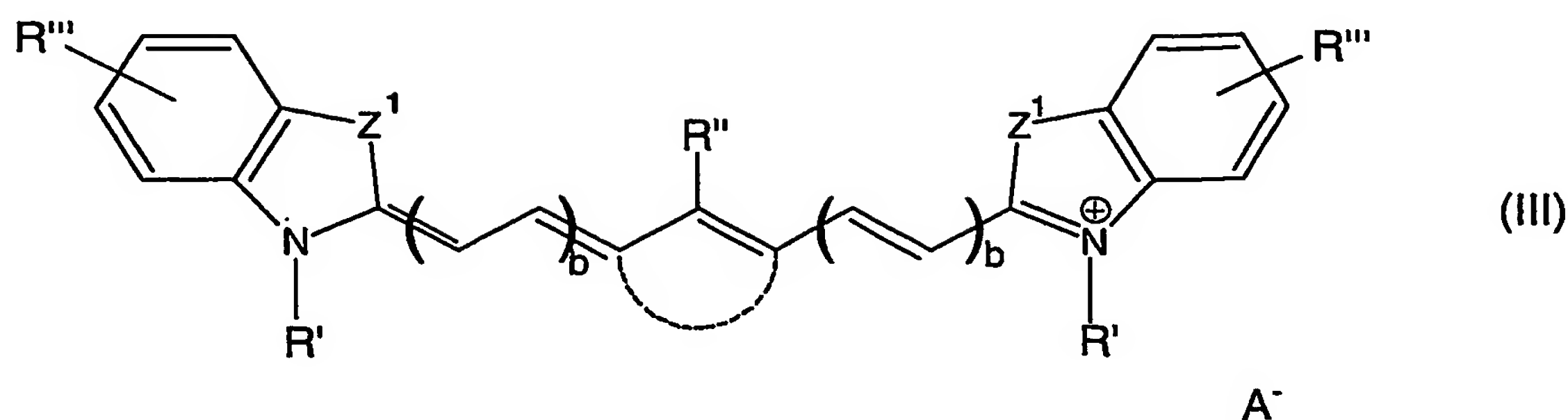


Claims

1. Process for the production of a heat-sensitive imageable element comprising:
 - (a) providing a substrate,
 - (b) applying a first coating solution,
comprising at least one photothermal conversion material, at least one polymer A soluble or swellable in an aqueous alkaline developer and at least one solvent,
 - (c) drying,
 - (d) applying a second coating solution,
comprising at least one cross-linkable polyfunctional enolether, at least one polymer B comprising hydroxy groups and/or carboxy groups, and at least one solvent, wherein the polymer A used in the first coating solution does not dissolve in this solvent,
wherein the second coating solution does not contain a photothermal conversion material, and
 - (e) heating to a temperature of at least 60°C.
2. Process according to claim 1, wherein the polymer A of the first coating solution is selected from copolymers derived from N-substituted maleimides and comonomers copolymerizable therewith, copolymers comprising a urea group in the side chain, and copolymers with a sulfonamide group in the side chain, and mixtures thereof.
3. Process according to claim 1 or 2, wherein the polymer B of the second coating solution is selected from novolaks, polyvinyl phenolic resins, acidic polyvinyl acetals and (meth)acrylic acid ester/(meth)acrylic acid copolymers, and mixtures thereof.
4. Process according to any of claims 1 to 3, wherein the photothermal conversion material has the formula



wherein

each Z^1 independently represents S, O, NR^a or $C(alkyl)_2$;

each R' independently represents an alkyl group, an alkylsulfonate group or an alkylammonium group;

R'' represents a halogen atom, SR^a , OR^a , SO_2R^a or NR^a_2 ;

each R''' independently represents a hydrogen atom, an alkyl group, $-COOR^a$, $-OR^a$, $-SR^a$, $-NR^a_2$ or a halogen atom; R''' can also be a benzofused ring;

A^- represents an anion;

--- represents an optionally present carbocyclic five- or six-membered ring;

R^a represents a hydrogen atom, an alkyl or aryl group;

each b can independently be 0, 1, 2 or 3.

5. Process according to any of claims 1 to 4, wherein the polyfunctional enoether is bis[4-(vinylloxy)butyl]isophthalate.
6. Process according to any of claims 1 to 5, wherein the first coating solution furthermore comprises at least one additive selected from contrast dyes and pigments, surfactants, print-out dyes, flow control agents and antioxidants.
7. Process according to any of claims 1 to 6, wherein the second coating solution furthermore comprises at least one additive selected from contrast dyes and pigments, surfactants, print-out dyes, flow control agents and antioxidants.
8. Process according to any of claims 1 to 7, wherein the solvent for the first coating solution comprises methyl lactate.

9. Process according to any of claims 1 to 8, wherein the solvent for the second coating solution comprises propylene glycol monomethylether acetate.
10. Process according to any of claims 1 to 9, wherein the application of the coating solution in steps (b) and (d) is carried out by means of a slot coater.
11. Process according to any of claims 1 to 10, wherein the drying of step (e) is carried out at a temperature in the range of 60 to 150°C.
12. Process according to any of claims 1 to 11, wherein prior to the application of the first coating solution, the substrate is subjected to at least one treatment selected from graining, anodizing and hydrophilizing.
13. Process according to any of claims 1 to 12, wherein the substrate is an aluminum plate or foil.
14. Heat-sensitive imageable element obtainable by the process according to any of claims 1 to 13.
15. Precursor of a heat-sensitive imageable element comprising:
 - (a) a substrate,
 - (b) a first layer on the substrate comprising at least one photothermal conversion material and at least on polymer A soluble or swellable in an aqueous alkaline developer and
 - (c) a second layer comprising at least one cross-linkable polyfunctional enoether and at least one polymer B comprising hydroxy groups and/or carboxy groups, wherein the second layer does not contain a photothermal conversion material.
16. Heat-sensitive imageable element obtainable by heating the precursor defined in claim 15 to a temperature of at least 60°C.